

REMARKS/ARGUMENTS

Claims 1, 3, 4, 9, 10, 13, 17, 18, 21, and 23-25 remain in this application. Claim 22 is canceled. Claim 25 is newly added.

Claim 1 has been amended to particularly point out and distinctly claim at least two substrates and at least one fenestration in at least one of the substrate. Claim 1 is further amended to clarify the wording of the claim.

Claims 9, 10, 17, 18, 21, and 24 are amended to clarify the wording of the claims.

Claim 25 presents a special embodiment of claim 1, wherein at least three substrates are stacked to assemble the device of the invention.

As to rejection of claims as being unpatentable over Yamagishi et al, 6,730,212 and Wohlstadter et al., 6,090,545, applicant respectfully submits that the Invention is distinct and is not disclosed or anticipated by either Yamagishi or Wohlstadter as discussed below.

With respect to rejection of claim 1, the invention is distinct from Yamagishi et al. Yamagishi et al teach a method to detect biological and chemical agents using two interdigitized electrodes. Two interdigitized electrodes (2a and 2b, Fig. 1(b)) are separated by a gap (G, Fig. 1(b)). There is only one continuous gap between the two electrodes. In addition, the number of electrodes is limited to two and they are arranged in only one two-dimensional plane. Moreover, the indicator molecules such as enzymes, antibodies, antigens or DNA are encapsulated in a sol-gel material that is coated on the electrodes (col 6, lines 7-8). The indicator molecules are not directly immobilized on the substrates. This is different from the Invention described in this application. Fig. 1 shows a single substrate containing multiple gaps or fenestrations 14 that are not continuous in the two-dimensional plane of the substrate. Additionally, more than one

substrates are arranged in the third dimension, as shown by the six substrate configuration (substrates 20, 22, 24, 26, 28, and 30, see Fig. 5). Moreover, the molecules of the first chemical species are directly immobilized or attached on the substrate.

As to rejection of claim 3, the applicant respectfully disagrees that openings between adjacent digits of the same electrode can be considered fenestrations as conceived by us. The intended purpose of openings of Yamagishi et al. is to keep the two electrodes electrically isolated from each other. The purpose of fenestrations in my invention is to allow diffusion and flow of a solution containing molecules of at least one second chemical species so that the molecules of the second chemical species can come in contact with molecules of the first chemical species present on more than one substrates when these substrates are stacked together in the third dimension.

As to rejection of claim 13, the applicant respectfully disagree that Wohlstadter et al. disclose or anticipate the Invention. Wohlstadter et al. described a electrochemiluminescence method to detect chemical or biological species. They provide deposition of chemical species on electrodes and counterelectrodes that face each other. Fig 5B is a schematic of a microfluidics guide comprised of multiple capillaries for use in delivering binding reagents to discrete binding sites and does not disclose deposition of the same species on a substrate (610, see Fig 5B and Fig 5C). Additionally, Wohlstadter et al. do not disclose use of more than one patterned array in their device. The counterelectrode does not have an array of patterned molecules. Both electrode and counterelectrode also lack fenestrations. In contrast, my Invention discloses multiple substrates bearing arrays of molecules of the first chemical species arranged in 'stacks'.

Claims 4, 9, 10, 13, 17, 18, and 23-25 derive from base claim 1 and are therefore, not disclosed or anticipated by either Yamagishi or Wohlstadter.

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In view of the examiner's earlier restriction requirement, applicant retains the right to present claims 5-8, 14, 15, 19 and 20 in a divisional application.

Applicant respectfully requests further examination of the claims.

Respectfully submitted

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